1 ABSTRAKT

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Title of diploma thesis: ***Plasticized polymeric systems with salicylic acid***
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The thermal and released characteristics of solid dispersions are studied and evaluated in this thesis. The copolymers of lactic and glycolic acid branched on the central molecule of tripentaerythritol were used as carrier. Salicylic acid were incorporated by solvent method using methyl formate and melting method. The theoretical part is focused on the characterization of the plasticizers (their efficiency, properties, toxicity, selection criteria, classification and biocompatibility) and the study of the solid dispersions (classification, mechanism of drug release, applications). The solvent method and evaporation employing the methyl formate is considered as suitable method of preparation of the solid dispersions with the higher content of salicylic acid. The results of the thermal analysis show that the drug is molecularly dispersed in the polymer. In concentrations from 5 % to 20 % salicylic acid possess the plasticizing effect. Methyl salicylate is employed as multifunctional plasticizer with decreasing effect on Tg and also serves as prodrug. Solid dispersion plasticized by various concentrations of methyl salicylate show during the dissolution tests the lower burst effect and slower drug release in comparison to the unplasticized solid dispersions.

Keywords: poorly water-soluble drug, solid dispersions, plasticizers, increased solubility, bioavailability, temperature of the glass transition, drug release